

TEST REPORT

Product Name: TV
FCC ID: 2A9L7TV65-US3B
Trademark: GAZER
Model Number: TV65-US3B, TV65-US3S, TV65-US3W, TV65-US3G
Prepared For: Gazer Limited
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Manufacturer: Gazer Limited
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Sample Received Date: Oct. 29, 2022
Sample tested Date: Oct. 29, 2022 to Nov.14, 2022
Issue Date: Nov.14, 2022
Report No.: CTB221114006RFX
Test Standards: FCC Part15.247
ANSI C63.10:2013
Test Results: PASS
Remark: This is WIFI-2.4GHz band radio test report.

Compiled by:

Reviewed by:

Approved by:

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Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB221114006RFX	Nov.14, 2022	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Band edge and RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)/15.205(a)	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013/ KDB 558074 D01 v05r02	PASS
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (b)	/	PASS
RF Exposure Evaluation	47 CFR Part 15 Subpart C Section 15.247 (i)/1.1310/2.1091	KDB447498D01v06	PASS

Remark:

Test according to ANSI C63.10-2013.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Item	Uncertainty
Occupancy bandwidth	U=±54.3Hz
Conducted output power Above 1G	U=±1.0dB
Conducted output power below 1G	U=±0.9dB
Power Spectral Density , Conduction	U=±1.0dB
Conduction spurious emissions	U=±2.8dB
Out of band emission	U=±54Hz
3m chamber Radiated spurious emission(9KHz-30MHz)	U=±4.8dB
3m chamber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
3m chamber Radiated spurious emission(1GHz-40GHz)	U=±4.8dB
humidity uncertainty	U=±5.3%
Temperature uncertainty	U=±0.59°C
Supply voltages	U=±3%
Time	U=±5%
Conducted Emission (9KHz-30MHz)	3.2 dB

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	TV65-US3B, TV65-US3S, TV65-US3W, TV65-US3G
Model Description:	All the model are the same circuit and RF module, only for model name. Test sample model: TV65-US3B
Wi-Fi Specification:	IEEE 802.11b/g/n
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	WiFi: IEEE 802.11b/g/n 20: 2412-2462MHz/ 11 channel IEEE 802.11n 40: 2422-2452MHz/ 7 channel
Max. RF output power:	WiFi (2.4G) : 16.744dBm
Type of Modulation:	WiFi: DSSS, OFDM
Antenna installation:	WiFi: PIFA antenna
Antenna Gain:	WiFi (2.4G) : 4.67dBi
Ratings:	AC 120V~240V 50/60Hz

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment

4.3 Support Equipment

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	Router	Huawei	AX2 Pro	/	/
2	Laptop	DELL	Vostro 5490	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462		

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

ANT 1+ ANT 2

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11b/g/n20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n40)	2422MHz	2437MHz	2452MHz

MIMO(ANT 1+ANT 2)

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11n20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n40)	2422MHz	2437MHz	2452MHz

EUT has two Internal Antenna with Max Antenna Gain 1.2dBi on every antenna, CDD device with two spatial streams, according to KDB662911 D01 v02r01,

Directional gain= GANT + Array Gain, where Array Gain is as follows.

1) For power spectral density(PSD) measurements,

Array Gain=10log(NANT/NSS)dB=10log(2/1)=3.01dB,

So the directional gain for PSD is 4.01dBi

2) For power measurements,

The Array gain=0 dB for NANT≤4,

So the directional gain for Power measurements is 1dBi

NOTE: Dutycycle>98%.

Test mode	Rate
802.11b	11M
802.11g	54M
802.11/n20	65M
802.11/n40	65M

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(AC):	120V
Normal Temperature(°C)	23
Low Temperature(°C)	0
High Temperature(°C)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinghe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2023.07.19
2	Power Sensor	Agilent	U2021XA	MY56120032	2023.07.19
3	Power Sensor	Agilent	U2021XA	MY56120034	2023.07.19
4	Communication test set	R&S	CMW500	108058	2023.07.19
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2023.07.19
6	Signal Generator	Agilent	N5181A	MY50140365	2023.07.19
7	Vector signal generator	Agilent	N5182A	MY47420195	2023.07.19
8	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2023.07.19
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2023.07.19
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2023.07.19
12	BT&WI-FI Automatic test software	Microwave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2023.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2023.07.19
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2023.07.19
18	Amplifier	HP	8447E	2945A02747	2023.07.19
19	Amplifier	Agilent	8449B	3008A01838	2023.07.19
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22

21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2023.07.22
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2023.07.23
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2024.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2024.10.30

Continuous disturbance					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	ROHDE&SCHWARZ	ESH3-Z5	100318	2023.07.19
2	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	2023.07.19
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2023.07.19
4	Coaxial cable	ZDECL	Z302S-NJ-SMA J-12M	18091905	2023.07.19
5	ISN	Schwarzbeck	NTFM8158	183	2023.07.19
6	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
7	Communication test set	R&S	CMW500	108058	2023.07.19
8	EZ-EMC	Frad	EMC-con3A1.1	/	/

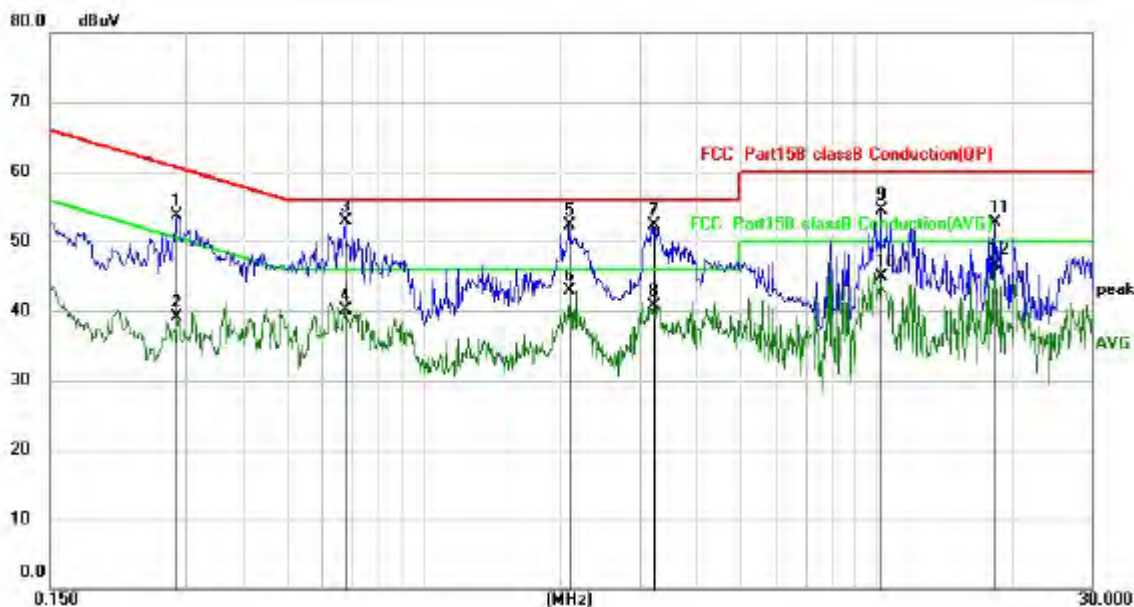
Radiated emission					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	2023.07.22
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22
3	Amplifier	Agilent	8449B	3008A01838	2023.07.19
4	Amplifier	HP	8447E	2945A02747	2023.07.19
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2023.07.19
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2023.07.19
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2023.07.19
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2023.07.19
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2023.07.19
10	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
11	Communication test set	R&S	CMW500	108058	2023.07.19
12	EZ-EMC	Frad	EMC-con3A1.1	/	/

This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

6.4 Test Result

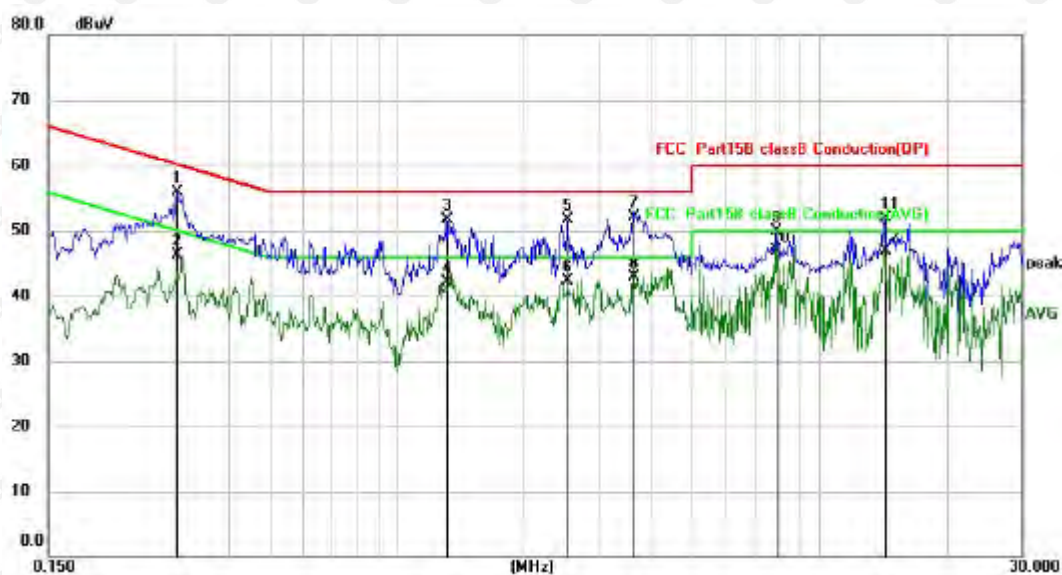
Test Specification: Line
AC 120V 60Hz



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.2862	43.71	9.99	53.70	60.63	-6.93	QP
2		0.2862	29.15	9.99	39.14	50.63	-11.49	AVG
3	*	0.6780	42.93	9.97	52.90	56.00	-3.10	QP
4		0.6780	30.16	9.97	40.13	46.00	-5.87	AVG
5		2.0900	42.34	10.03	52.37	56.00	-3.63	QP
6		2.0900	32.78	10.03	42.81	46.00	-3.19	AVG
7		3.2219	42.18	10.09	52.27	56.00	-3.73	QP
8		3.2219	30.67	10.09	40.76	46.00	-5.24	AVG
9		10.2459	44.15	10.36	54.51	60.00	-5.49	QP
10		10.2459	34.49	10.36	44.85	50.00	-5.15	AVG
11		18.2419	42.10	10.53	52.63	60.00	-7.37	QP
12		18.2419	36.13	10.53	46.66	50.00	-3.34	AVG

Remark: Factor = Cable loss + LISN factor, Margin = Measurement – Limit

Test Specification: Neutral
AC 120V 60Hz



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.3034	45.83	9.99	55.82	60.15	-4.33	QP
2		0.3034	36.27	9.99	46.26	50.15	-3.89	AVG
3		1.3140	41.80	9.99	51.79	56.00	-4.21	QP
4		1.3140	32.11	9.99	42.10	46.00	-3.90	AVG
5		2.5379	41.58	10.05	51.63	56.00	-4.37	QP
6		2.5379	32.20	10.05	42.25	46.00	-3.75	AVG
7		3.6339	42.05	10.11	52.16	56.00	-3.84	QP
8	*	3.6339	32.84	10.11	42.95	46.00	-3.05	AVG
9		7.9218	39.72	10.28	50.00	60.00	-10.00	QP
10		7.9218	36.60	10.28	46.88	50.00	-3.12	AVG
11		14.2736	41.40	10.44	51.84	60.00	-8.16	QP
12		14.2736	36.49	10.44	46.93	50.00	-3.07	AVG

Remark: Factor = Cable loss + LISN factor, Margin = Measurement – Limit

7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup

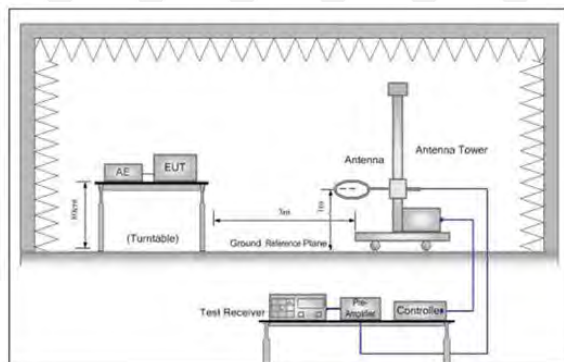


Figure 1. Below 30MHz

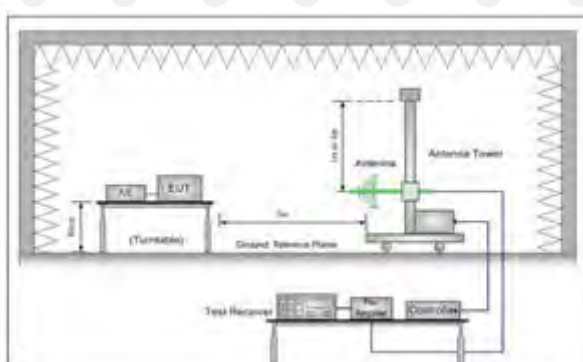


Figure 2. 30MHz to 1GHz

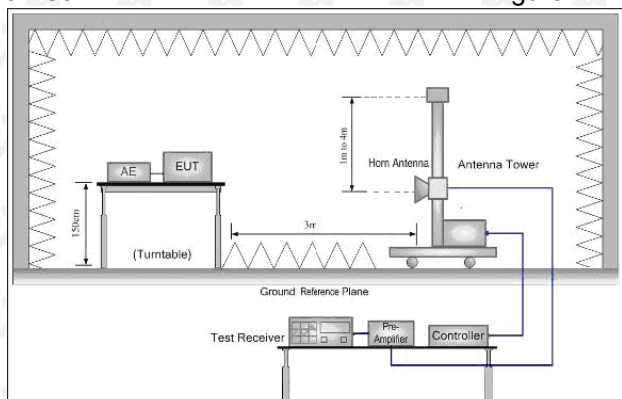


Figure 3. Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dB μ V/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)	-	-	300
0.490MHz-1.705MHz	24000/F (kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

7.3 Test procedure

Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
- h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
- j. Repeat above procedures until all frequencies measured was complete.

Receiver set:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

7.4 Test Result

After pre-scanning three directions, the report recorded the worst case

Below 1GHz Test Results:

Antenna polarity: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		54.4515	39.60	-7.03	32.57	40.00	-7.43	QP
2		77.3210	40.22	-10.12	30.10	40.00	-9.90	QP
3		145.3505	40.63	-5.48	35.15	43.50	-8.35	QP
4		241.6759	43.51	-8.20	35.31	46.00	-10.69	QP
5		337.2155	44.18	-4.42	39.76	46.00	-6.24	QP
6	*	722.9923	37.48	4.30	41.78	46.00	-4.22	QP

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level

Antenna polarity: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	!	37.3509	42.72	-6.55	36.17	40.00	-3.83	QP
2	!	80.0805	46.06	-10.50	35.56	40.00	-4.44	QP
3		108.8375	44.97	-8.88	36.09	43.50	-7.41	QP
4		241.6759	42.46	-8.20	34.26	46.00	-11.74	QP
5		434.8267	38.68	-1.71	36.97	46.00	-9.03	QP
6	*	596.1770	41.72	2.36	44.08	46.00	-1.92	QP

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level

1. The margin of 9K-30MH measurement exceeds 20dB, so the test chart is not included.

2. All modes have been tested, and the test results show that ANT2 b-mode data is the worst, only ANT2 b-mode test chart is put.

Above 1 GHz Test Results:

ANT2 LOW CH1 (802.11b Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	65.20	-3.64	61.56	74	-12.44	peak
4824	50.69	-3.64	47.05	54	-6.95	AVG
7236	59.60	-0.95	58.65	74	-15.35	peak
7236	43.87	-0.95	42.92	54	-11.08	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	66.77	-3.64	63.13	74	-10.87	peak
4824	48.85	-3.64	45.21	54	-8.79	AVG
7236	58.88	-0.95	57.93	74	-16.07	peak
7236	43.25	-0.95	42.30	54	-11.70	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 MID CH6 (802.11b Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	66.21	-3.51	62.70	74	-11.30	peak
4874	50.30	-3.51	46.79	54	-7.21	AVG
7311	59.05	-0.82	58.23	74	-15.77	peak
7311	44.83	-0.82	44.01	54	-9.99	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	64.41	-3.51	60.90	74	-13.10	peak
4874	49.25	-3.51	45.74	54	-8.26	AVG
7311	59.52	-0.82	58.70	74	-15.30	peak
7311	42.71	-0.82	41.89	54	-12.11	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 HIGH CH11 (802.11b Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	62.28	-3.43	58.85	74	-15.15	peak
4924	48.62	-3.43	45.19	54	-8.81	AVG
7386	59.96	-0.75	59.21	74	-14.79	peak
7386	44.44	-0.75	43.69	54	-10.31	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	63.22	-3.43	59.79	74	-14.21	peak
4924	47.71	-3.43	44.28	54	-9.72	AVG
7386	56.59	-0.75	55.84	74	-18.16	peak
7386	42.78	-0.75	42.03	54	-11.97	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

ANT2 LOW CH1 (802.11g Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	63.79	-3.64	60.15	74	-13.85	peak
4824	49.87	-3.64	46.23	54	-7.77	AVG
7236	56.94	-0.95	55.99	74	-18.01	peak
7236	45.80	-0.95	44.85	54	-9.15	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	63.34	-3.64	59.70	74	-14.30	peak
4824	46.61	-3.64	42.97	54	-11.03	AVG
7236	57.78	-0.95	56.83	74	-17.17	peak
7236	43.00	-0.95	42.05	54	-11.95	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 MID CH6 (802.11g Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	65.32	-3.51	61.81	74	-12.19	peak
4874	48.79	-3.51	45.28	54	-8.72	AVG
7311	59.87	-0.82	59.05	74	-14.95	peak
7311	45.13	-0.82	44.31	54	-9.69	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.30	-3.51	59.79	74	-14.21	peak
4874	46.85	-3.51	43.34	54	-10.66	AVG
7311	57.11	-0.82	56.29	74	-17.71	peak
7311	41.92	-0.82	41.10	54	-12.90	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	63.89	-3.43	60.46	74	-13.54	peak
4924	49.47	-3.43	46.04	54	-7.96	AVG
7386	57.50	-0.75	56.75	74	-17.25	peak
7386	43.43	-0.75	42.68	54	-11.32	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	64.83	-3.43	61.40	74	-12.60	peak
4924	48.16	-3.43	44.73	54	-9.27	AVG
7386	56.99	-0.75	56.24	74	-17.76	peak
7386	41.27	-0.75	40.52	54	-13.48	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

Above 1GHz ANT1+ANT2 :

LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	62.85	-3.64	59.21	74	-14.79	peak
4824	47.98	-3.64	44.34	54	-9.66	AVG
7236	57.55	-0.95	56.60	74	-17.40	peak
7236	43.58	-0.95	42.63	54	-11.37	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	62.99	-3.64	59.35	74	-14.65	peak
4824	48.28	-3.64	44.64	54	-9.36	AVG
7236	56.49	-0.95	55.54	74	-18.46	peak
7236	45.10	-0.95	44.15	54	-9.85	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4874.00	64.06	-3.51	60.55	74.00	-13.45	peak
4874.00	47.85	-3.51	44.34	54.00	-9.66	AVG
7311.00	59.64	-0.82	58.82	74.00	-15.18	peak
7311.00	44.69	-0.82	43.87	54.00	-10.13	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4874.00	62.88	-3.51	59.37	74.00	-14.63	peak
4874.00	46.98	-3.51	43.47	54.00	-10.53	AVG
7311.00	57.05	-0.82	56.23	74.00	-17.77	peak
7311.00	43.46	-0.82	42.64	54.00	-11.36	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 HIGH CH11 (802.11n/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	63.35	-3.43	59.92	74	-14.08	peak
4924	45.74	-3.43	42.31	54	-11.69	AVG
7386	59.10	-0.75	58.35	74	-15.65	peak
7386	42.07	-0.75	41.32	54	-12.68	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	65.53	-3.43	62.10	74	-11.90	peak
4924	46.81	-3.43	43.38	54	-10.62	AVG
7386	56.35	-0.75	55.60	74	-18.40	peak
7386	43.59	-0.75	42.84	54	-11.16	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 LOW CH3 (802.11n/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	63.91	-3.63	60.28	74	-13.72	peak
4844	48.38	-3.63	44.75	54	-9.25	AVG
7266	59.06	-0.94	58.12	74	-15.88	peak
7266	44.25	-0.94	43.31	54	-10.69	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	64.81	-3.63	61.18	74	-12.82	peak
4844	48.40	-3.63	44.77	54	-9.23	AVG
7266	59.73	-0.94	58.79	74	-15.21	peak
7266	44.84	-0.94	43.90	54	-10.10	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.34	-3.51	59.83	74	-14.17	peak
4874	48.18	-3.51	44.67	54	-9.33	AVG
7311	58.35	-0.82	57.53	74	-16.47	peak
7311	44.03	-0.82	43.21	54	-10.79	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	62.30	-3.51	58.79	74	-15.21	peak
4874	46.43	-3.51	42.92	54	-11.08	AVG
7311	56.69	-0.82	55.87	74	-18.13	peak
7311	43.28	-0.82	42.46	54	-11.54	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 HIGH CH9 (802.11n/H40 Mode)/2452

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4904	62.97	-3.43	59.54	74	-14.46	peak
4904	46.84	-3.43	43.41	54	-10.59	AVG
7356	57.43	-0.75	56.68	74	-17.32	peak
7356	41.38	-0.75	40.63	54	-13.37	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4904	61.93	-3.43	58.50	74	-15.50	peak
4904	46.44	-3.43	43.01	54	-10.99	AVG
7356	57.78	-0.75	57.03	74	-16.97	peak
7356	44.66	-0.75	43.91	54	-10.09	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

Restricted bands around fundamental frequency (Radiated)

Operation Mode:

ANT 2 802.11b Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	57.61	-5.81	51.80	74	-22.20	peak
2390	/	-5.81	/	54	/	AVG
2399	63.34	-5.84	57.50	74	-16.50	peak
2399	48.46	-5.84	42.62	54	-11.38	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	56.91	-5.81	51.10	74	-22.90	peak
2390	/	-5.81	/	54	/	AVG
2399	62.98	-5.84	57.14	74	-16.86	peak
2399	46.77	-5.84	40.93	54	-13.07	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

When the peak value is smaller than the AVG limit, AVG is not reflected.

Operation Mode: ANT2 802.11b Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.89	-5.65	51.24	74	-22.76	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.96	-5.65	51.31	74	-22.69	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode: ANT2 802.11g Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	58.21	-5.81	52.40	74	-21.60	peak
2390	/	-5.81	/	54	/	AVG
2399	62.07	-5.84	56.23	74	-17.77	peak
2399	46.66	-5.84	40.82	54	-13.18	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	57.03	-5.81	51.22	74	-22.78	peak
2390	/	-5.81	/	54	/	AVG
2399	62.78	-5.84	56.94	74	-17.06	peak
2399	46.72	-5.84	40.88	54	-13.12	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Operation Mode: ANT2 802.11g Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.70	-5.65	52.05	74	-21.95	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.70	-5.65	51.05	74	-22.95	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode: ANT1+ANT2 802.11n/H20 Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	57.59	-5.81	51.78	74	-22.22	peak
2390	/	-5.81	/	54	/	AVG
2399	62.86	-5.84	57.02	74	-16.98	peak
2399	48.46	-5.84	42.62	54	-11.38	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	57.54	-5.81	51.73	74	-22.27	peak
2390	/	-5.81	/	54	/	AVG
2399	60.54	-5.84	54.70	74	-19.30	peak
2399	47.57	-5.84	41.73	54	-12.27	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Operation Mode: ANT1+ANT2 802.11n/H20 Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.36	-5.65	50.71	74	-23.29	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	55.83	-5.65	50.18	74	-23.82	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode: ANT1+ANT2 802.11n/H40 Mode TX CH Low (2422MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	58.64	-5.81	52.83	74	-21.17	peak
2390	/	-5.81	/	54	/	AVG
2399	62.26	-5.84	56.42	74	-17.58	peak
2399	46.21	-5.84	40.37	54	-13.63	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	58.83	-5.81	53.02	74	-20.98	peak
2390	/	-5.81	/	54	/	AVG
2399	60.74	-5.84	54.90	74	-19.10	peak
2399	46.13	-5.84	40.29	54	-13.71	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Operation Mode: ANT1+ANT2 802.11n/H40 Mode TX CH High (2452MHz)

Horizontal

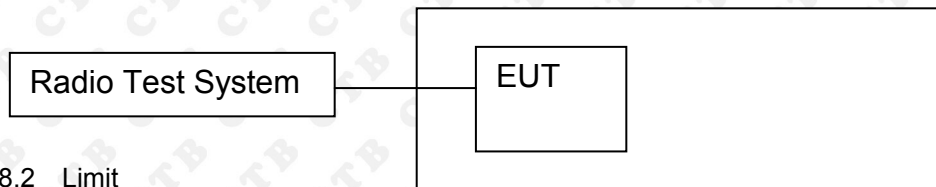
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.94	-5.65	51.29	74	-22.71	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.53	-5.65	51.88	74	-22.12	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

8. BAND EDGE AND RF CONDUCTED SPURIOUS EMISSIONS

8.1 Block Diagram Of Test Setup



8.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
 - Below 30MHz:
 - RBW = 100kHz, VBW = 300kHz, Sweep = auto
 - Detector function = peak, Trace = max hold
 - Above 30MHz:
 - RBW = 100KHz, VBW = 300KHz, Sweep = auto
 - Detector function = peak, Trace = max hold

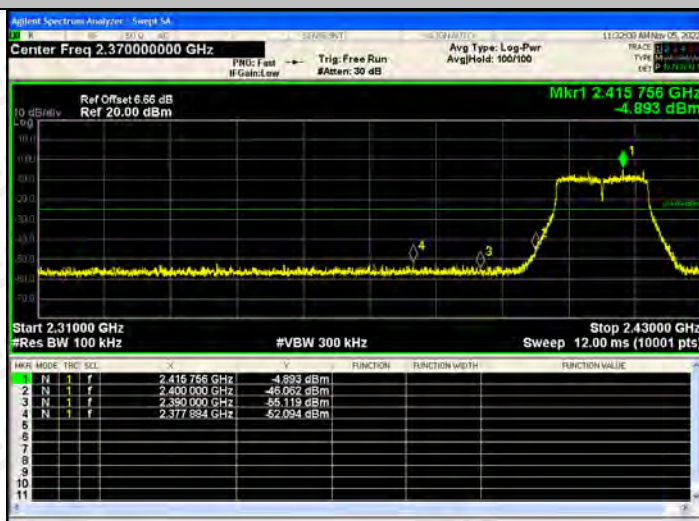
8.4 Test Result

ANT1:



BAND EDGE Graphs

802.11g/LCH

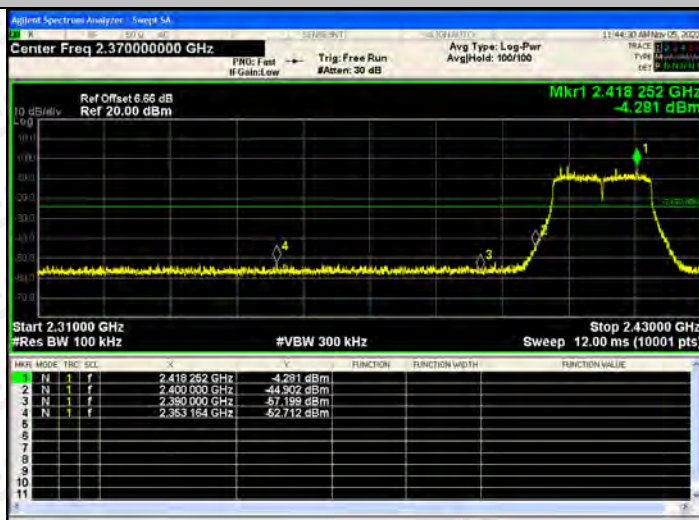


802.11g/HCH



BAND EDGE Graphs

802.11n(HT20)/L
CH

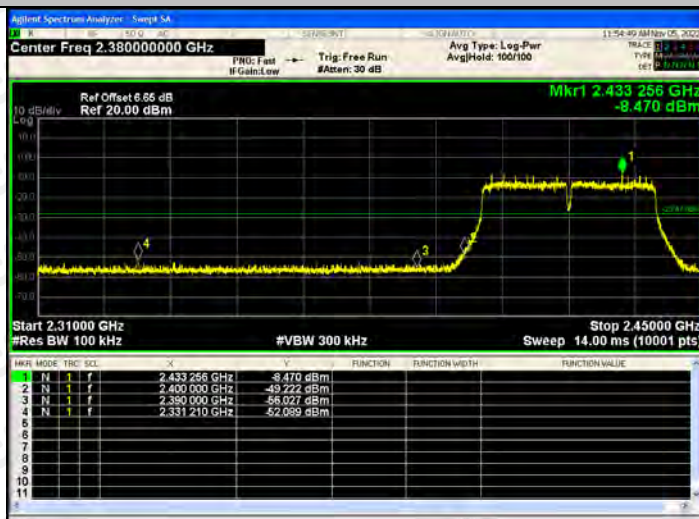


802.11n(HT20)/H
CH

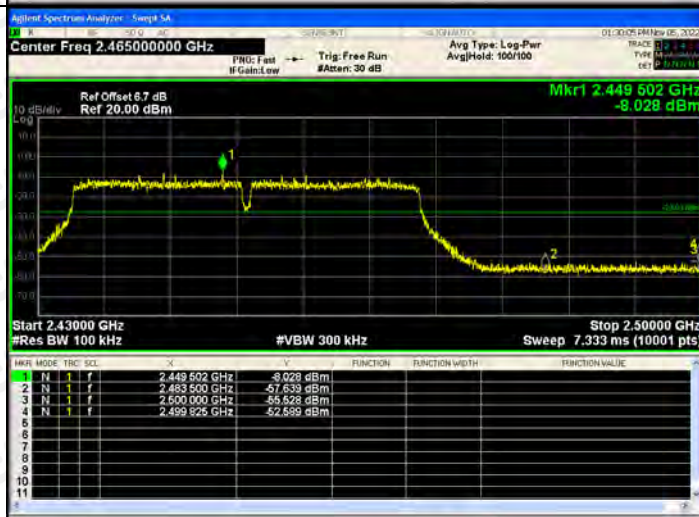


BAND EDGE Graphs

802.11n(HT40)/L
CH



802.11n(HT40)/H
CH



RF Conducted Spurious Emissions Graphs

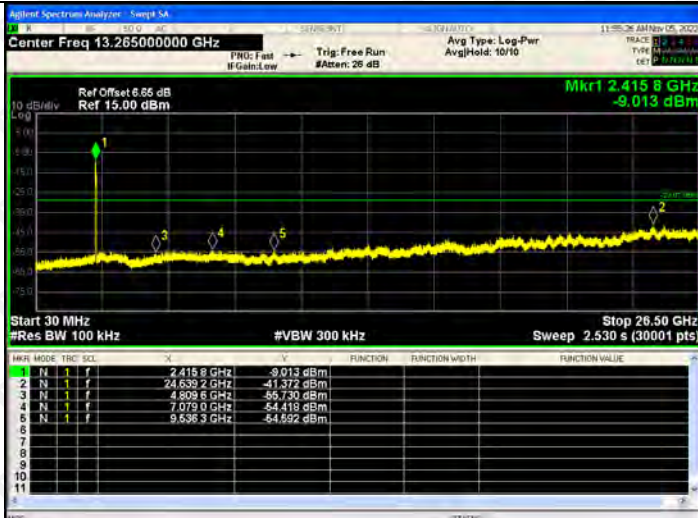
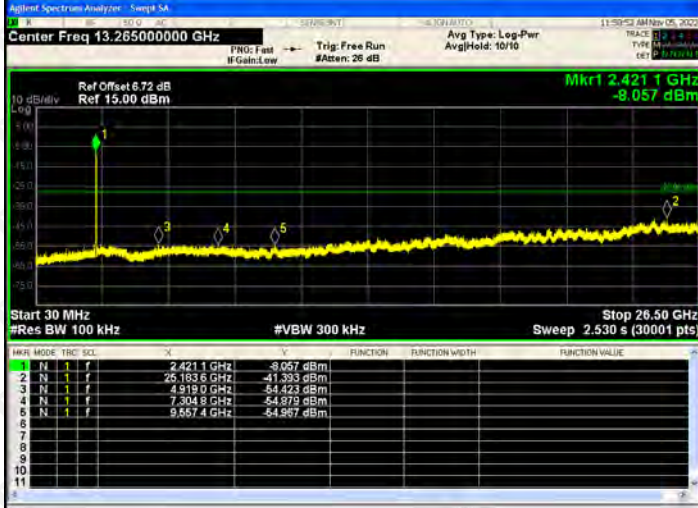
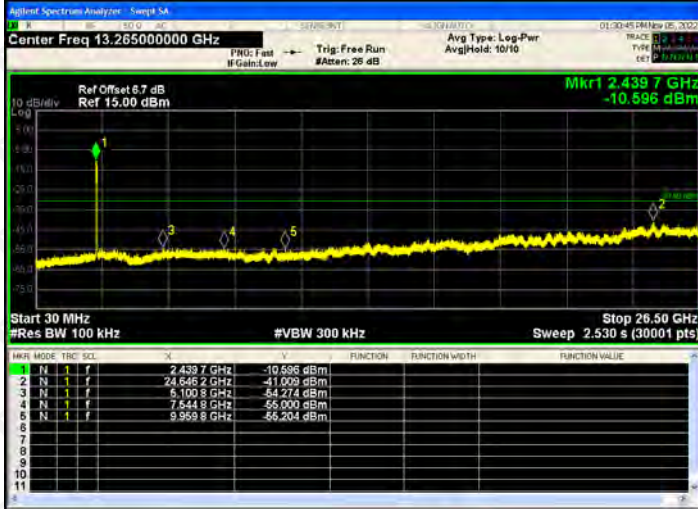


RF Conducted Spurious Emissions Graphs

802.11g /LCH	
802.11g /MCH	
802.11g /HCH	

RF Conducted Spurious Emissions Graphs

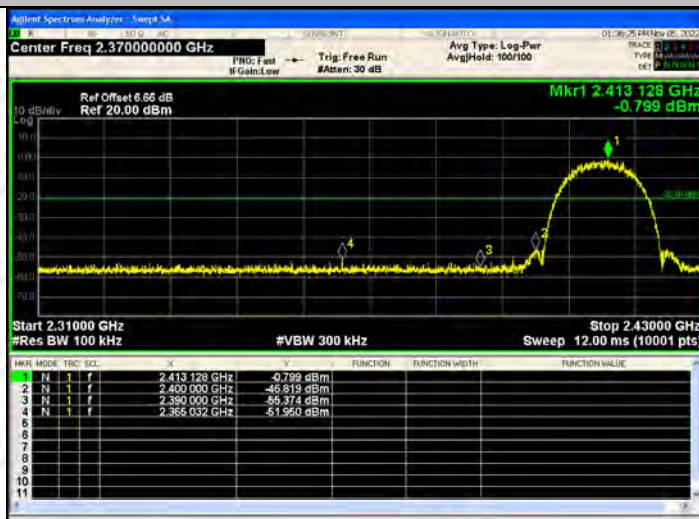
802.11n (HT20)/ LCH	
802.11 n(HT20) /MCH	
802.11 n(HT20) /HCH	

802.11n (HT40)/ LCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.25000000 GHz Ref Offset 6.65 dB Ref 15.00 dBm Mkr1 2.4158 GHz -9.013 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.4158 GHz</td><td>-9.013 dBm</td></tr><tr><td>2</td><td>24.6382 GHz</td><td>-41.372 dBm</td></tr><tr><td>3</td><td>4.8096 GHz</td><td>-55.730 dBm</td></tr><tr><td>4</td><td>7.0790 GHz</td><td>-54.418 dBm</td></tr><tr><td>5</td><td>9.6363 GHz</td><td>-54.592 dBm</td></tr></table>	Marker	Freq	Power	1	2.4158 GHz	-9.013 dBm	2	24.6382 GHz	-41.372 dBm	3	4.8096 GHz	-55.730 dBm	4	7.0790 GHz	-54.418 dBm	5	9.6363 GHz	-54.592 dBm
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802.11 n(HT40) /MCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.25000000 GHz Ref Offset 6.72 dB Ref 15.00 dBm Mkr1 2.4211 GHz -9.057 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.4211 GHz</td><td>-9.057 dBm</td></tr><tr><td>2</td><td>25.1836 GHz</td><td>-41.333 dBm</td></tr><tr><td>3</td><td>4.8190 GHz</td><td>-54.423 dBm</td></tr><tr><td>4</td><td>7.3048 GHz</td><td>-54.379 dBm</td></tr><tr><td>5</td><td>9.6574 GHz</td><td>-54.987 dBm</td></tr></table>	Marker	Freq	Power	1	2.4211 GHz	-9.057 dBm	2	25.1836 GHz	-41.333 dBm	3	4.8190 GHz	-54.423 dBm	4	7.3048 GHz	-54.379 dBm	5	9.6574 GHz	-54.987 dBm
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4	7.3048 GHz	-54.379 dBm																	
5	9.6574 GHz	-54.987 dBm																	
802.11 n(HT40) /HCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.25000000 GHz Ref Offset 6.7 dB Ref 15.00 dBm Mkr1 2.4397 GHz -10.596 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.4397 GHz</td><td>-10.596 dBm</td></tr><tr><td>2</td><td>24.6482 GHz</td><td>-41.009 dBm</td></tr><tr><td>3</td><td>5.1008 GHz</td><td>-54.274 dBm</td></tr><tr><td>4</td><td>7.4449 GHz</td><td>-54.000 dBm</td></tr><tr><td>5</td><td>9.9598 GHz</td><td>-55.204 dBm</td></tr></table>	Marker	Freq	Power	1	2.4397 GHz	-10.596 dBm	2	24.6482 GHz	-41.009 dBm	3	5.1008 GHz	-54.274 dBm	4	7.4449 GHz	-54.000 dBm	5	9.9598 GHz	-55.204 dBm
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2	24.6482 GHz	-41.009 dBm																	
3	5.1008 GHz	-54.274 dBm																	
4	7.4449 GHz	-54.000 dBm																	
5	9.9598 GHz	-55.204 dBm																	

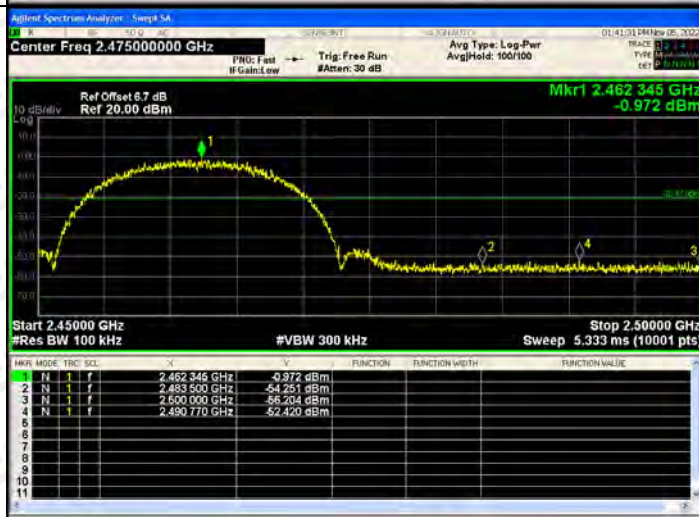
ANT2:

BAND EDGE Graphs

802.11b/LCH

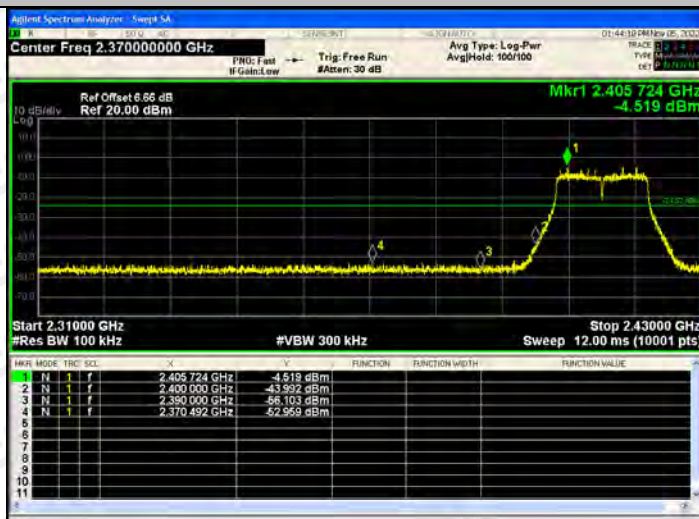


802.11b/HCH

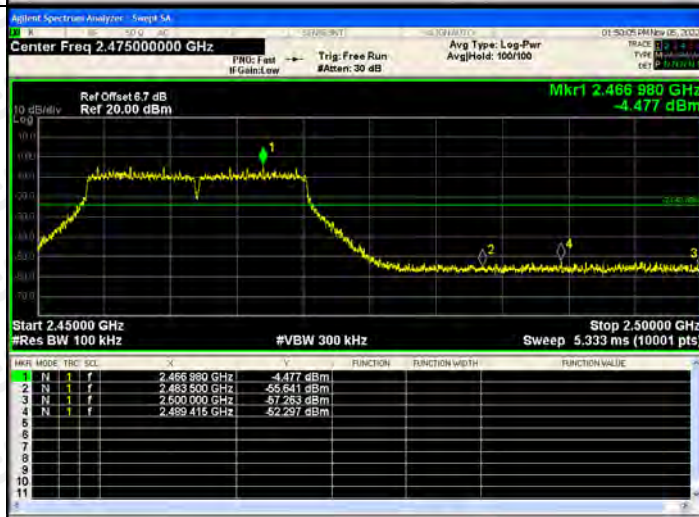


BAND EDGE Graphs

802.11g/LCH



802.11g/HCH

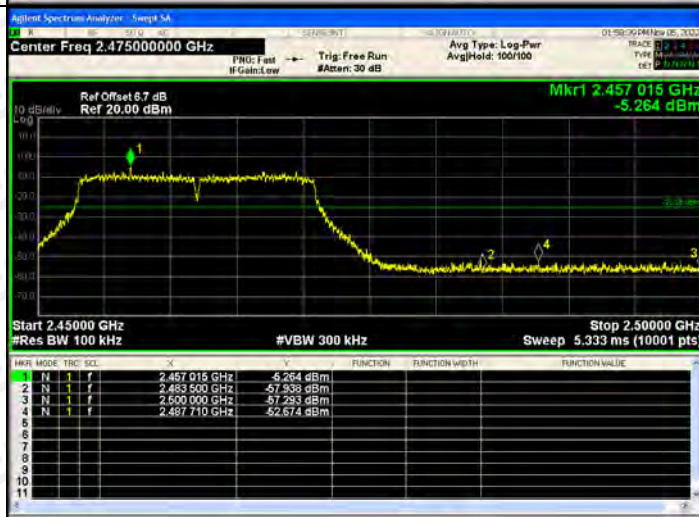


BAND EDGE Graphs

802.11n(HT20)/L
CH

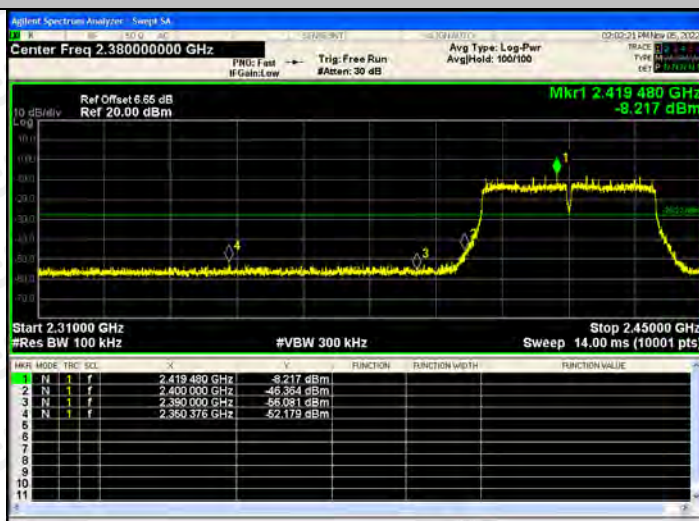


802.11n(HT20)/H
CH



BAND EDGE Graphs

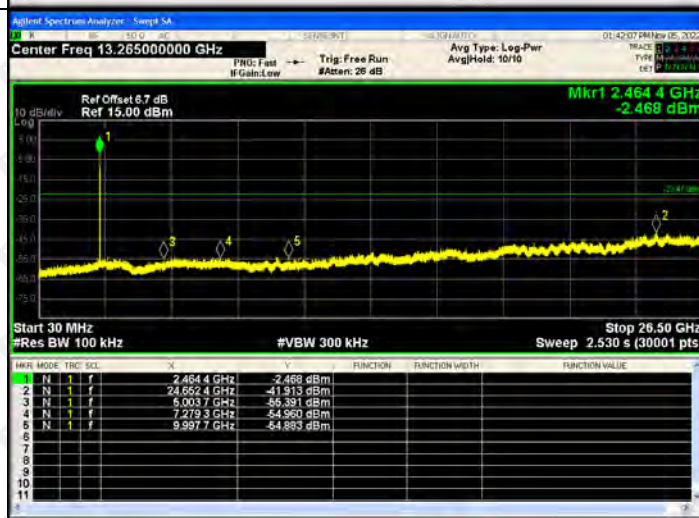
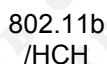
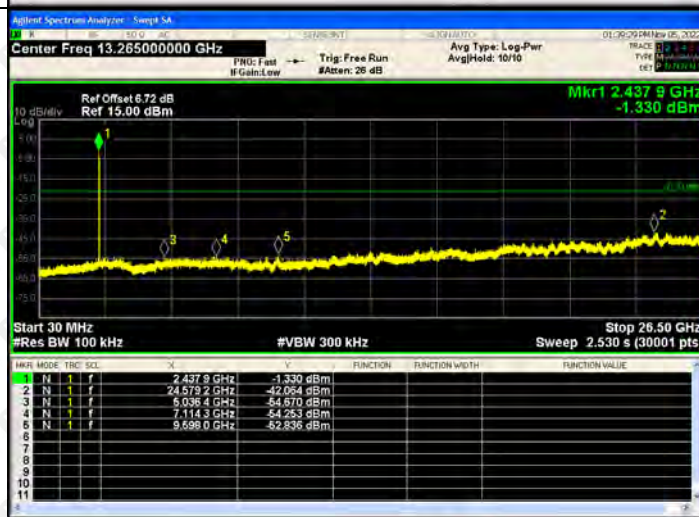
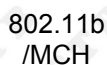
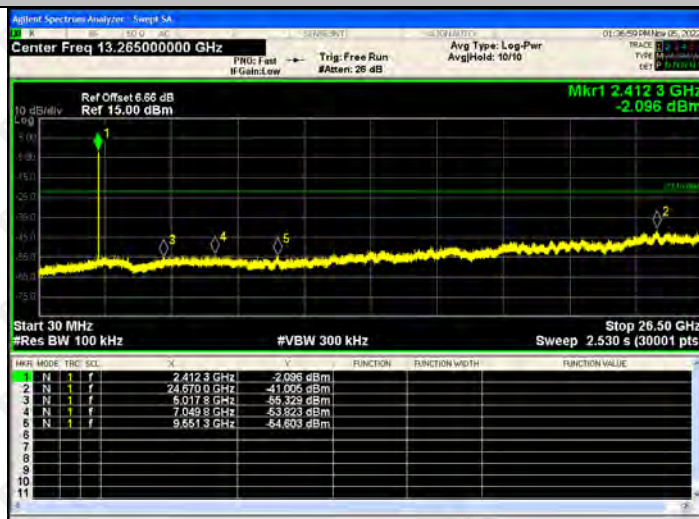
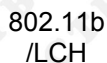
802.11n(HT40)/L
CH



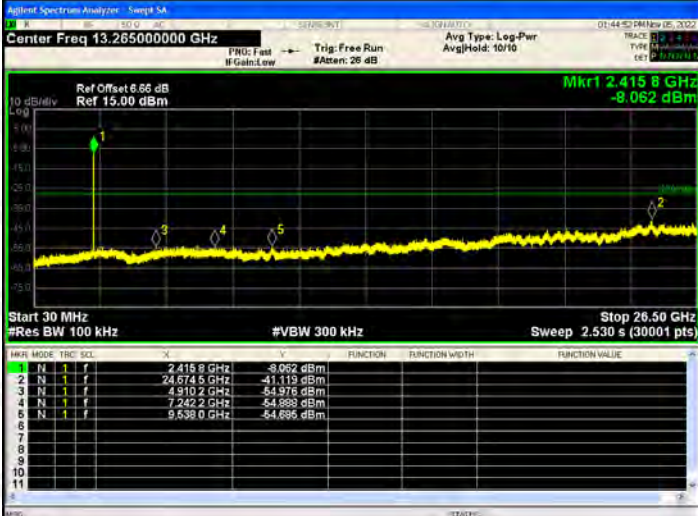
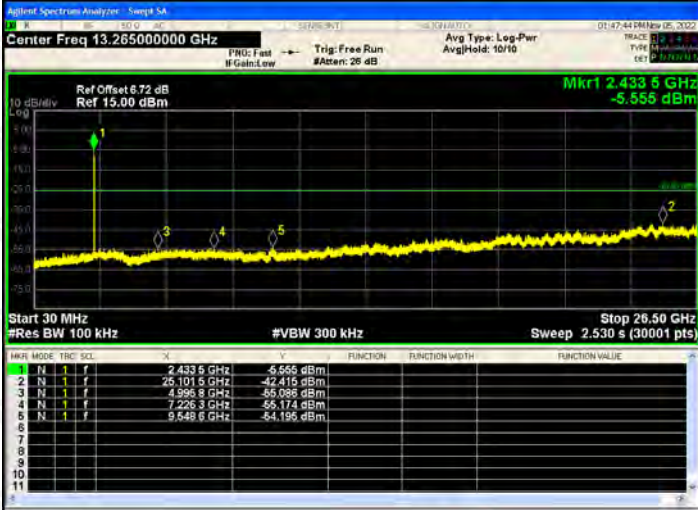
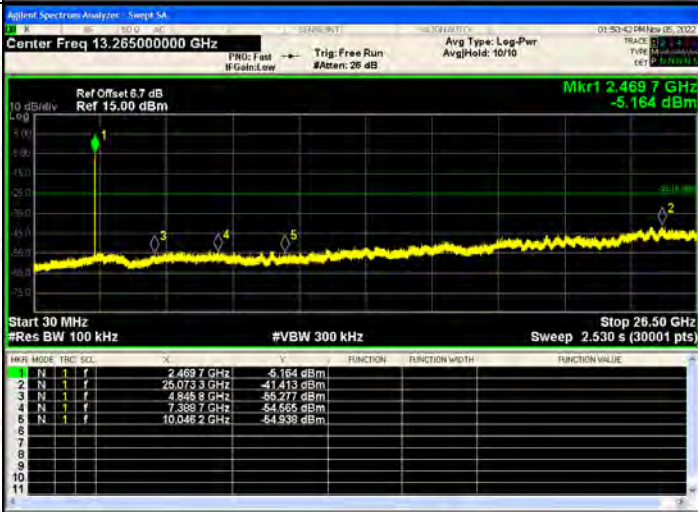
802.11n(HT40)/H
CH



ent Spectrum Analyzer - Swept SA



RF Conducted Spurious Emissions Graphs

802.11g /LCH	
802.11g /MCH	
802.11g /HCH	

RF Conducted Spurious Emissions Graphs

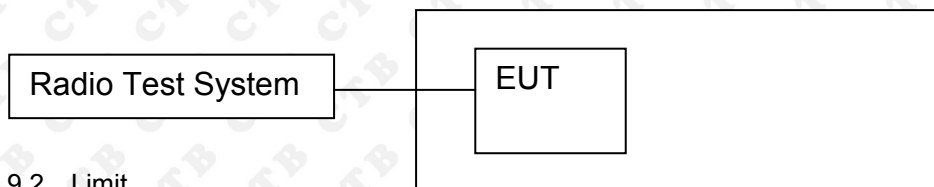
802.11n (HT20)/ LCH	Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.26500000 GHz Ref Offset 6.66 dB Ref 15.00 dBm Mkr1 2.4061 GHz -7.884 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>CH</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.4061 GHz</td><td>-7.884 dBm</td></tr><tr><td>2</td><td>2.4335 GHz</td><td>-41.339 dBm</td></tr><tr><td>3</td><td>2.4547 GHz</td><td>-55.246 dBm</td></tr><tr><td>4</td><td>2.4630 GHz</td><td>-54.321 dBm</td></tr><tr><td>5</td><td>4.7875 GHz</td><td>-53.979 dBm</td></tr></table>	CH	Freq	Power	1	2.4061 GHz	-7.884 dBm	2	2.4335 GHz	-41.339 dBm	3	2.4547 GHz	-55.246 dBm	4	2.4630 GHz	-54.321 dBm	5	4.7875 GHz	-53.979 dBm
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802.11 n(HT20) /HCH	Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.26500000 GHz Ref Offset 6.7 dB Ref 15.00 dBm Mkr1 2.4547 GHz -5.065 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>CH</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.4547 GHz</td><td>-5.065 dBm</td></tr><tr><td>2</td><td>2.4335 GHz</td><td>-41.671 dBm</td></tr><tr><td>3</td><td>2.4630 GHz</td><td>-54.284 dBm</td></tr><tr><td>4</td><td>4.7875 GHz</td><td>-53.669 dBm</td></tr><tr><td>5</td><td>7.0498 GHz</td><td>-55.223 dBm</td></tr></table>	CH	Freq	Power	1	2.4547 GHz	-5.065 dBm	2	2.4335 GHz	-41.671 dBm	3	2.4630 GHz	-54.284 dBm	4	4.7875 GHz	-53.669 dBm	5	7.0498 GHz	-55.223 dBm
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5	7.0498 GHz	-55.223 dBm																	

RF Conducted Spurious Emissions Graphs



9. COUDUCTED OUTPUT POWER

9.1 Block Diagram Of Test Setup



9.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

9.3 Test procedure

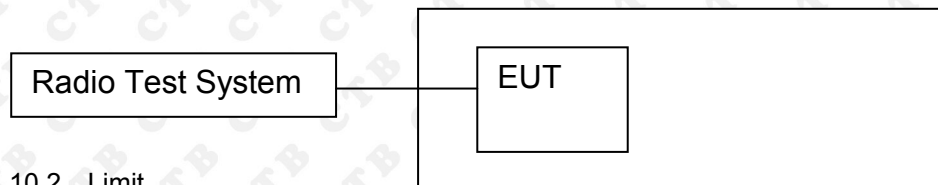
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak. Channel power function is used
3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

9.4 Test Result

Mode	Channel.	Maximum Output Power [dBm] ant 1	Maximum Output Power [dBm] ant 2	Total Power Conducted Output Power(PK)	Limit[dBm]
802.11b	LCH	14.332	14.765	/	30
	MCH	14.164	14.515	/	30
	HCH	14.66	14.593	/	30
802.11g	LCH	13.408	13.594	/	30
	MCH	13.227	13.41	/	30
	HCH	13.113	13.754	/	30
802.11n(HT20)	LCH	13.889	13.551	16.734	30
	MCH	13.643	13.822	16.744	30
	HCH	13.58	13.212	16.410	30
802.11n(HT40)	LCH	12.666	12.626	15.656	30
	MCH	12.848	12.544	15.709	30
	HCH	12.804	12.436	15.634	30

10. 6DB OCCUPIED BANDWIDTH

10.1 Block Diagram Of Test Setup



10.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

10.3 Test procedure

1. Rem1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

10.4 Test Result

ANT1:

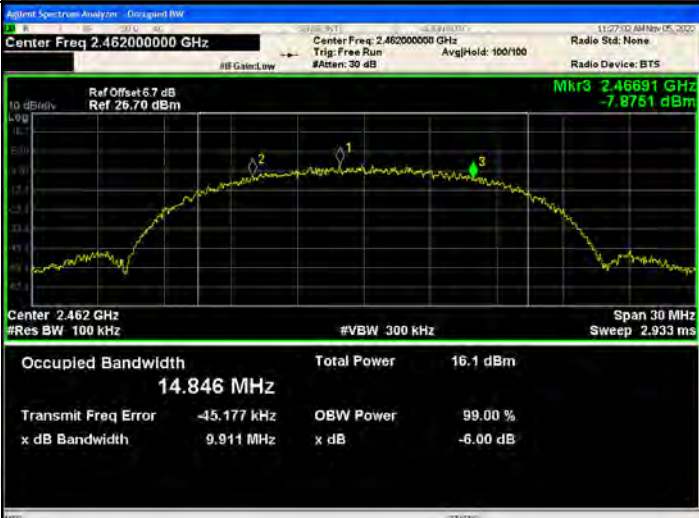
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.685	500	PASS
	MCH	10.237	500	PASS
	HCH	9.911	500	PASS
802.11g	LCH	16.352	500	PASS
	MCH	16.347	500	PASS
	HCH	16.332	500	PASS
802.11n(HT20)	LCH	17.565	500	PASS
	MCH	17.288	500	PASS
	HCH	17.079	500	PASS
802.11n(HT40)	LCH	35.172	500	PASS
	MCH	35.399	500	PASS
	HCH	35.568	500	PASS

ANT2:

Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.7	500	PASS
	MCH	10.613	500	PASS
	HCH	10.656	500	PASS
802.11g	LCH	16.345	500	PASS
	MCH	16.323	500	PASS
	HCH	16.359	500	PASS
802.11n(HT20)	LCH	17.277	500	PASS
	MCH	17.027	500	PASS
	HCH	17.208	500	PASS
802.11n(HT40)	LCH	35.447	500	PASS
	MCH	35.344	500	PASS
	HCH	35.204	500	PASS

ANT1:

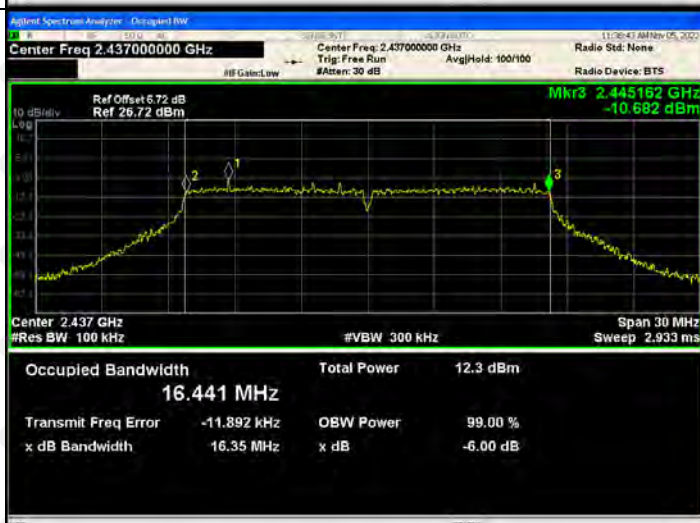
Test Graph:

Graphs	
802.11b /LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.66 dB Ref: 26.66 dBm Mkr3: 2.41737 GHz -9.5223 dBm Center: 2.412 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.900 MHz Total Power: 15.7 dBm Transmit Freq Error: 27.235 kHz OBW Power: 99.00 % x dB Bandwidth: 10.69 MHz x dB: -6.00 dB
802.11b /MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.72 dB Ref: 26.72 dBm Mkr3: 2.442106 GHz -9.5391 dBm Center: 2.437 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.897 MHz Total Power: 15.5 dBm Transmit Freq Error: -12.164 kHz OBW Power: 99.00 % x dB Bandwidth: 10.24 MHz x dB: -6.00 dB
802.11b/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.7 dB Ref: 26.70 dBm Mkr3: 2.46891 GHz -7.8751 dBm Center: 2.462 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.846 MHz Total Power: 16.1 dBm Transmit Freq Error: -45.177 kHz OBW Power: 99.00 % x dB Bandwidth: 9.911 MHz x dB: -6.00 dB

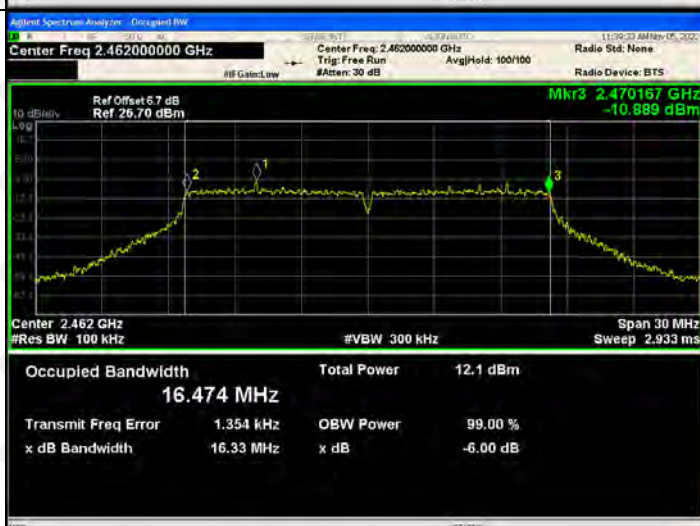
802.11g/LCH

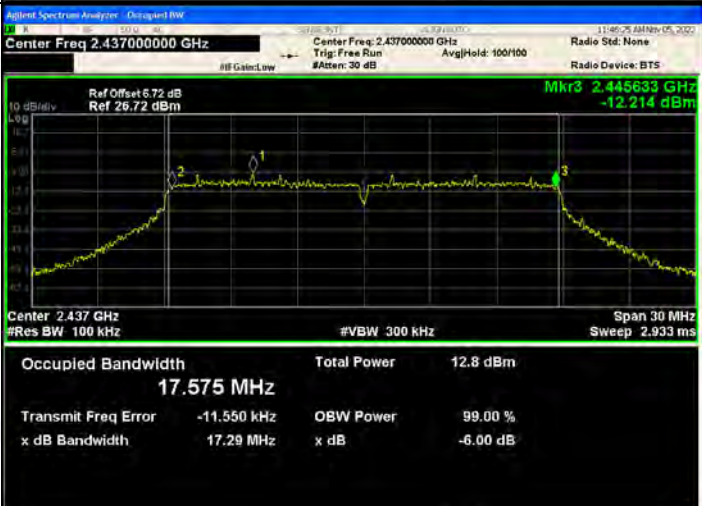


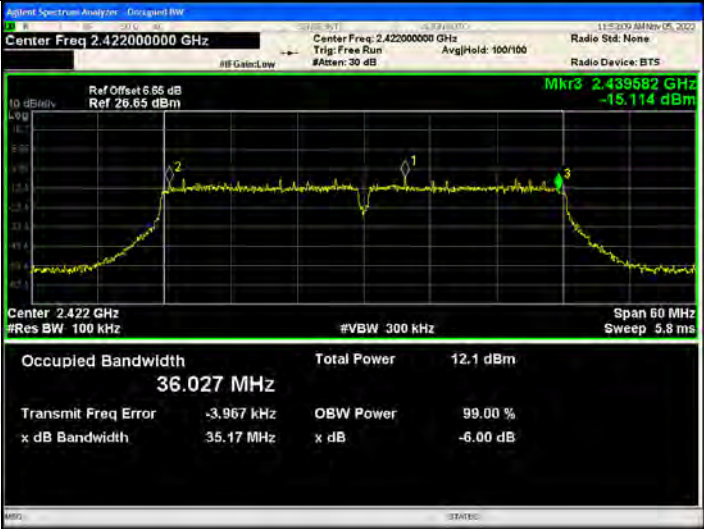
802.11g/MCH



802.11g/HCH

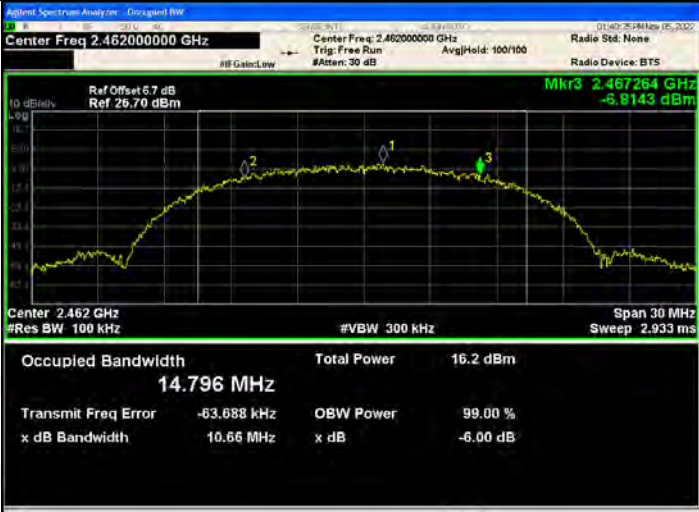


802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 6.66 dB Ref 26.66 dBm Center Freq 2.41200000 GHz Trig: Free Run #Atten: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.420772 GHz -10.422 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.611 MHz Total Power 12.9 dBm Transmit Freq Error -10.130 kHz OBW Power 99.00 % x dB Bandwidth 17.57 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Center Freq 2.43700000 GHz Trig: Free Run #Atten: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.445633 GHz -12.214 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.575 MHz Total Power 12.8 dBm Transmit Freq Error -11.550 kHz OBW Power 99.00 % x dB Bandwidth 17.29 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Center Freq 2.46200000 GHz Trig: Free Run #Atten: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.470532 GHz -9.9741 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.621 MHz Total Power 12.6 dBm Transmit Freq Error -8.187 kHz OBW Power 99.00 % x dB Bandwidth 17.08 MHz x dB -6.00 dB

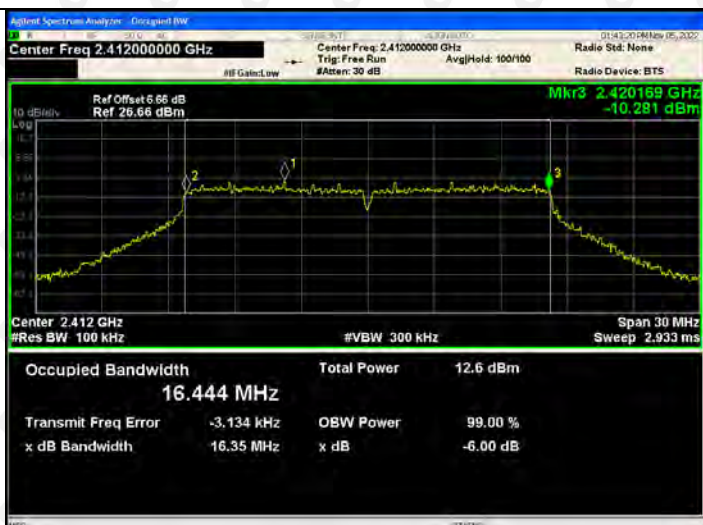
802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.42200000 GHz Ref Offset 6.65 dB Ref 26.65 dBm Mkr3 2.439582 GHz -15.114 dBm Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 36.027 MHz Total Power 12.1 dBm Transmit Freq Error -3.967 kHz OBW Power 99.00 % x dB Bandwidth 35.17 MHz x dB -6.00 dB
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Mkr3 2.454677 GHz -14.935 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 36.045 MHz Total Power 12.5 dBm Transmit Freq Error -22.970 kHz OBW Power 99.00 % x dB Bandwidth 35.40 MHz x dB -6.00 dB
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.45200000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Mkr3 2.469752 GHz -14.002 dBm Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 36.039 MHz Total Power 12.3 dBm Transmit Freq Error -32.182 kHz OBW Power 99.00 % x dB Bandwidth 35.57 MHz x dB -6.00 dB

ANT2:

Test Graph:

Graphs	
802.11b /LCH	 Agilent Spectrum Analyzer - Crossed BW Center Freq: 2.41200000 GHz Center Freq: 2.41200000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.66 dB Ref: 26.66 dBm Mkr3: 2.417347 GHz -9.3933 dBm Center: 2.412 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.838 MHz Total Power: 16.2 dBm Transmit Freq Error: -2.752 kHz OBW Power: 99.00 % x dB Bandwidth: 10.70 MHz x dB: -6.00 dB
802.11b /MCH	 Agilent Spectrum Analyzer - Crossed BW Center Freq: 2.43700000 GHz Center Freq: 2.43700000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.72 dB Ref: 26.72 dBm Mkr3: 2.442239 GHz -7.6665 dBm Center: 2.437 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.794 MHz Total Power: 16.0 dBm Transmit Freq Error: -67.117 kHz OBW Power: 99.00 % x dB Bandwidth: 10.61 MHz x dB: -6.00 dB
802.11b/HCH	 Agilent Spectrum Analyzer - Crossed BW Center Freq: 2.46200000 GHz Center Freq: 2.46200000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset: 6.7 dB Ref: 26.70 dBm Mkr3: 2.467264 GHz -6.8143 dBm Center: 2.462 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms Occupied Bandwidth: 14.796 MHz Total Power: 16.2 dBm Transmit Freq Error: -63.688 kHz OBW Power: 99.00 % x dB Bandwidth: 10.66 MHz x dB: -6.00 dB

802.11g/LCH

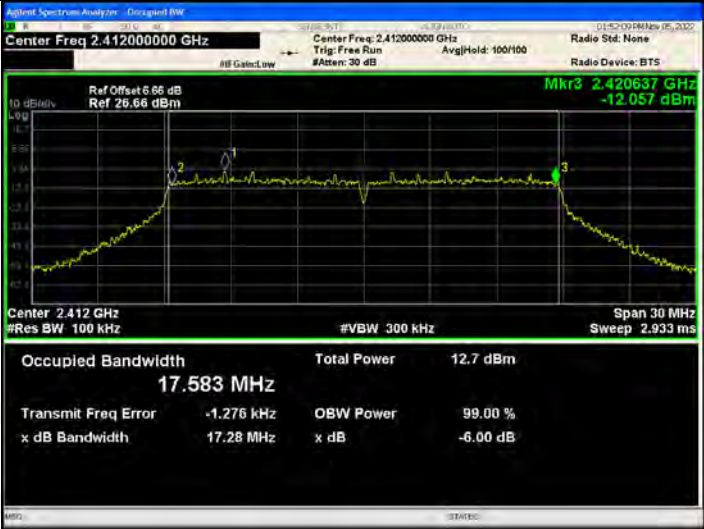


802.11g/MCH



802.11g/HCH

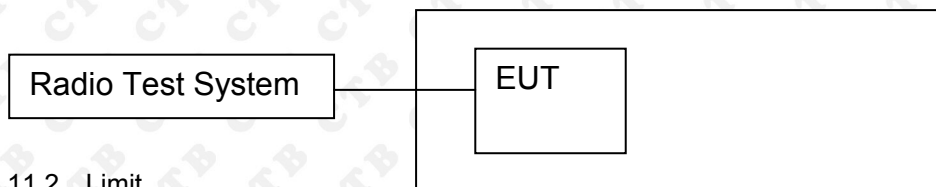


802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.66 dB Ref 26.66 dBm Mkr3 2.420637 GHz -12.057 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.583 MHz Total Power 12.7 dBm Transmit Freq Error -1.276 kHz OBW Power 99.00 % x dB Bandwidth 17.28 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Mkr3 2.445507 GHz -10.952 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.597 MHz Total Power 12.8 dBm Transmit Freq Error -5.921 kHz OBW Power 99.00 % x dB Bandwidth 17.03 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Mkr3 2.470607 GHz -12.184 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.616 MHz Total Power 12.1 dBm Transmit Freq Error 3.059 kHz OBW Power 99.00 % x dB Bandwidth 17.21 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.422000000 GHz Ref Offset: 6.65 dB Ref: 26.65 dBm Mkr3: 2.439889 GHz -14.395 dBm Center: 2.422 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>12.2 dBm</td></tr><tr><td>36.033 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-34.464 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.45 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	12.2 dBm	36.033 MHz			Transmit Freq Error	OBW Power	99.00 %	-34.464 kHz	x dB	-6.00 dB	x dB Bandwidth			35.45 MHz		
Occupied Bandwidth	Total Power	12.2 dBm																	
36.033 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-34.464 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.45 MHz																			
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset: 6.72 dB Ref: 26.72 dBm Mkr3: 2.454644 GHz -15.940 dBm Center: 2.437 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>12.1 dBm</td></tr><tr><td>36.020 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-28.392 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.34 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	12.1 dBm	36.020 MHz			Transmit Freq Error	OBW Power	99.00 %	-28.392 kHz	x dB	-6.00 dB	x dB Bandwidth			35.34 MHz		
Occupied Bandwidth	Total Power	12.1 dBm																	
36.020 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-28.392 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.34 MHz																			
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.452000000 GHz Ref Offset: 6.7 dB Ref: 26.70 dBm Mkr3: 2.469562 GHz -14.209 dBm Center: 2.452 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.6 dBm</td></tr><tr><td>35.996 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-39.781 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.20 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.6 dBm	35.996 MHz			Transmit Freq Error	OBW Power	99.00 %	-39.781 kHz	x dB	-6.00 dB	x dB Bandwidth			35.20 MHz		
Occupied Bandwidth	Total Power	11.6 dBm																	
35.996 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-39.781 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.20 MHz																			

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

11.3 Test procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = Peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

11.4 Test Result

Mode	Channel.	Power Spectral Density [dBm /3KHz] ANT 1	Power Spectral Density [dBm /3KHz] ANT 2	Power Spectral Density [dBm /3KHz] Total	Limit(dBm)
802.11b	LCH	-15.717	-14.976	/	6.32
	MCH	-15.554	-15.093	/	6.32
	HCH	-14.931	-14.792	/	6.32
802.11g	LCH	-17.899	-18.154	/	6.32
	MCH	-18.523	-18.178	/	6.32
	HCH	-18.984	-18.231	/	6.32
802.11n(H T20)	LCH	-18.063	-19.672	-15.783	6.32
	MCH	-19.145	-19.001	-16.062	6.32
	HCH	-17.88	-18.587	-15.209	6.32
802.11n(H T40)	LCH	-23.058	-22.9	-19.968	6.32
	MCH	-22.5	-21.325	-18.863	6.32
	HCH	-21.949	-23.077	-19.466	6.32

ANT1: Test Graph

Graphs

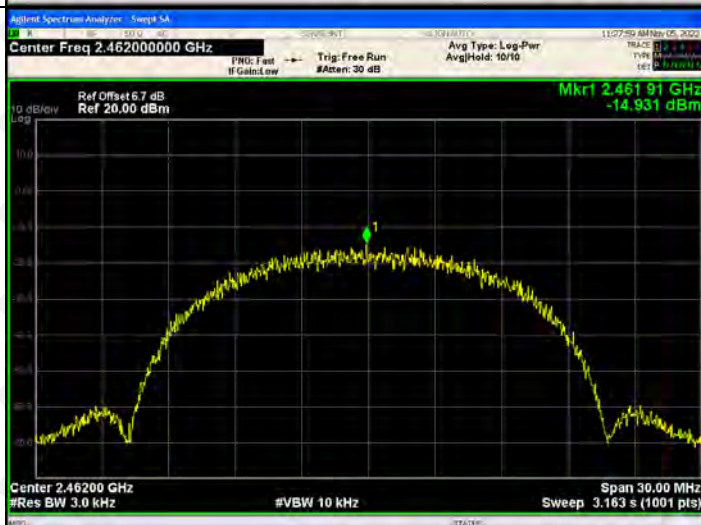
802.11b /LCH



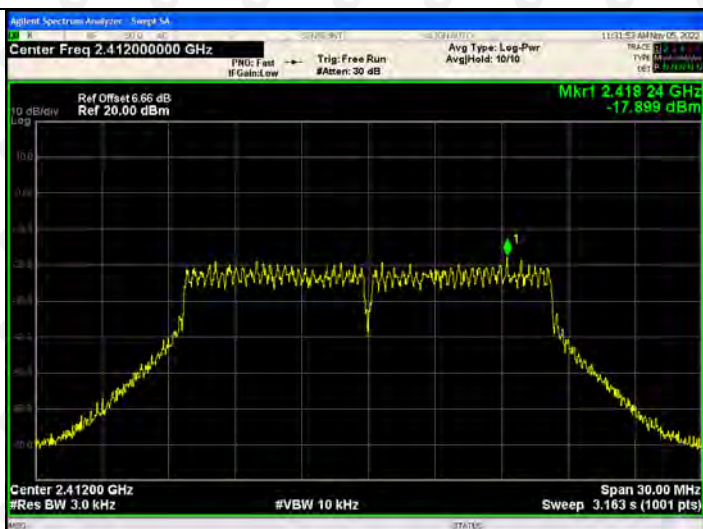
802.11b /MCH



802.11b/HCH



802.11g/LCH

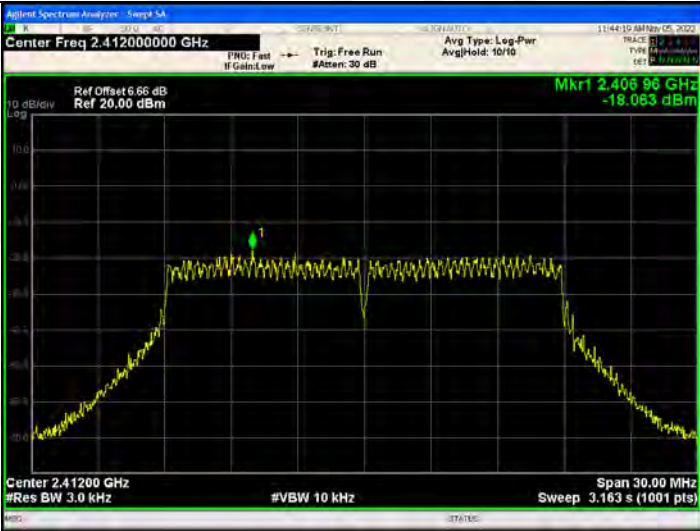
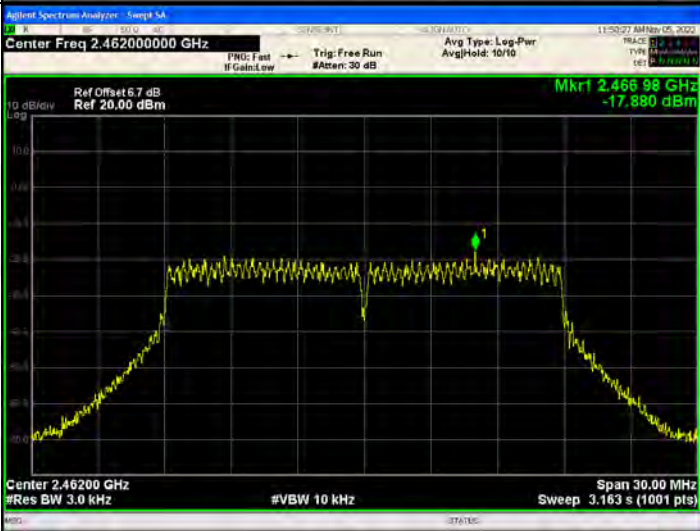


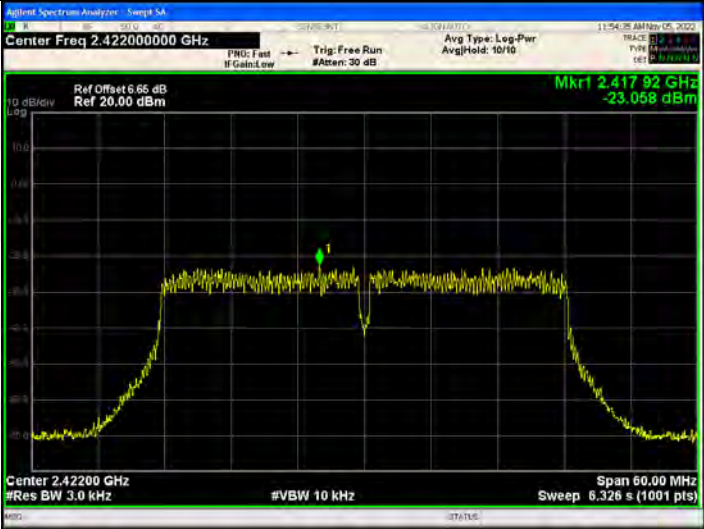
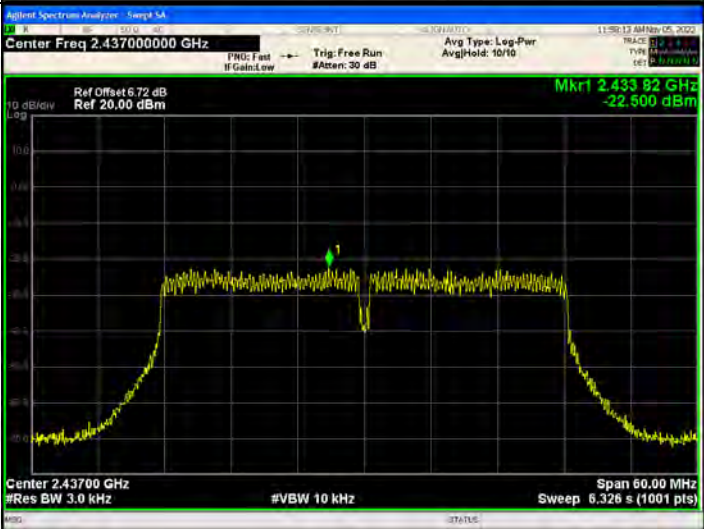
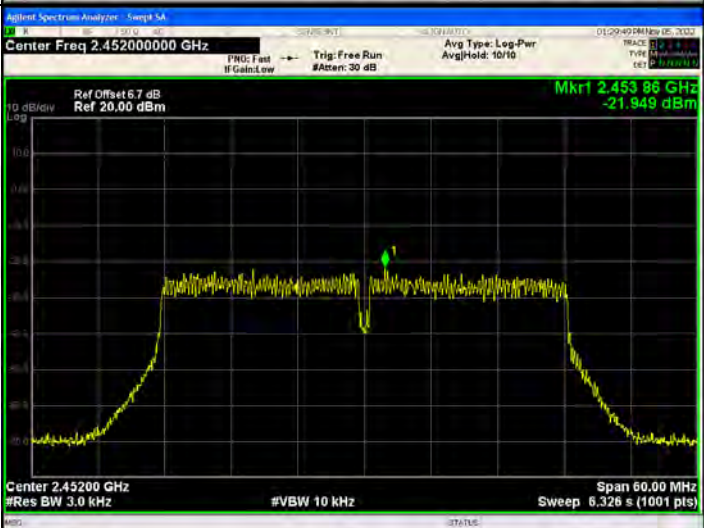
802.11g/MCH



802.11g/HCH



802.11n(HT20)/LC H	
802.11n(HT20)/MC H	
802.11n(HT20)/HC H	

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.42200000 GHz Ref Offset 6.85 dB Ref 20.00 dBm Mkr1 2.417 92 GHz -23.058 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 2.433 82 GHz -22.500 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.45200000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 2.453 86 GHz -21.949 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)

ANT 2: Test Graph

Graphs

802.11b /LCH



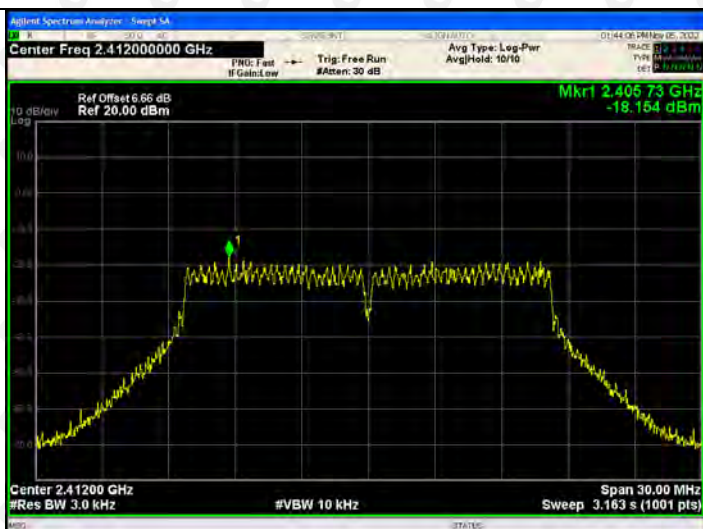
802.11b /MCH



802.11b/HCH



802.11g/LCH

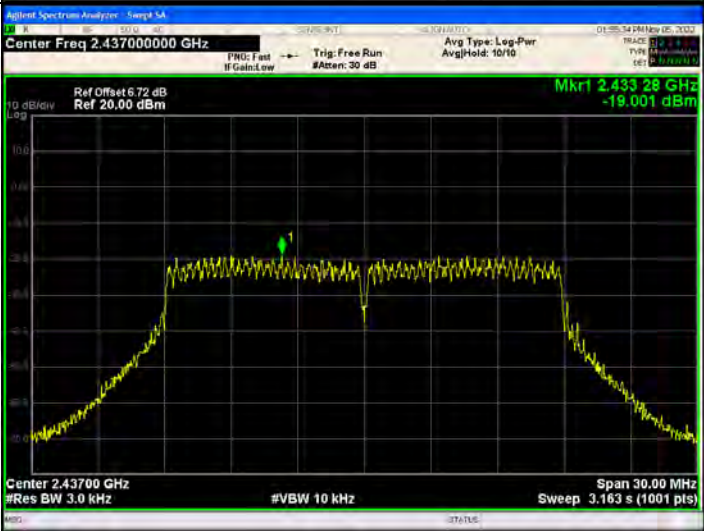


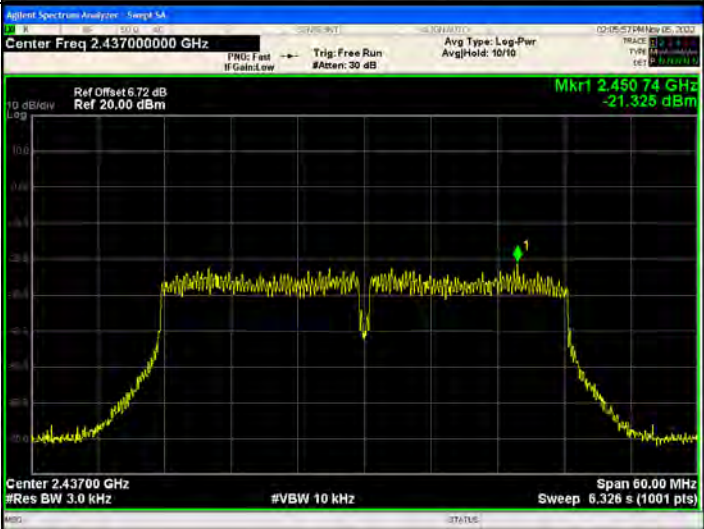
802.11g/MCH



802.11g/HCH



802.11n(HT20)/LC H	
802.11n(HT20)/MC H	
802.11n(HT20)/HC H	

802.11n(HT40)/LC H	
802.11n(HT40)/MC H	
802.11n(HT40)/HC H	

12. ANTENNA REQUIREMENT

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is PIFA antenna and no consideration of replacement. The best case gain of the antenna is 4.67dBi.

13. EUT PHOTOGRAPHS**External Photos****EUT Photo 1****EUT Photo 2**

14. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G



Conducted Emission



***** END OF REPORT *****